

**METHOD AND APPARATUS FOR CONTROLLING FRICTION BETWEEN A
FLUID AND A BODY**

5 A method and apparatus is disclosed wherein nanostructures or microstructures are disposed on a surface of a body (such as a submersible vehicle) that is adapted to move through a fluid, such as water. The nanostructures or microstructures are disposed on the surface in a way such that the contact between the surface and the fluid is reduced and,

10 correspondingly, the friction between the surface and the fluid is reduced. In an illustrative embodiment, the surface is a surface on a submarine or other submersible vehicle (such as a torpedo). Illustratively, electrowetting principles are used to cause the fluid to at least partially penetrate the nanostructures or microstructures on the surface of the body in order to

15 selectively create greater friction in a desired location of the surface. Such penetration may be used, for example, to create drag that alters the direction or speed of travel of the body.